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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/715,301

11/17/2003

Michael D. Skelcher

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07/27/2006

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EXAMINER

SPISICH, GEORGE D

ART UNIT

PAPER NUMBER

3616

DATE MAILED: 07/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/715,301	Applicant(s) SKELCHER ET AL.	
	Examiner George D. Spisich	Art Unit 3616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,2 and 5-10 is/are rejected.  
7) ☒ Claim(s) 3 and 4 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 28 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

The drawings were received on April 28, 2006. These drawings are accepted.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,2,6-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paggi et al. (USPN 6,273,203 provided in Applicant's IDS) in view of Furihata et al. (USPN 5,623,410 cited in the First Office Action).

Paggi et al. discloses an agricultural vehicle having a chassis and a cab connected to the chassis by means of a support system including four hydraulic actuators. The actuators are arranged in a square formation.

The system is controlled by an electronic control unit/circuit by a signal from a sensor inherently broadly considered to move with the movement of the cab in at least that the cab and the sensor are on the same vehicle.

The sensor is disclosed as a gyroscope or inclinometer (col. 2, lines 45-57).

Paggi et al. discloses an alarm (col. 3, lines 23-27) that indicates a rollover danger by one or more of the actuators reaching the end of its stroke position (limit of its adjustment range).

Although Paggi et al. does not disclose the actuator as a hydro-pneumatic unit that additionally acts as a spring and damper, Paggi et al. disclose (col. 2, lines 28-30), that the actuators can be hydraulic or pneumatic.

Paggi et al. does not disclose the actuators being diagonally connected in pairs, such that as one actuator is lowered and the volume of fluid in that actuator is reduced, the volume of fluid in the other actuator of the pair is correspondingly increased.

However, Furihata et al. (see Fig. 2) discloses a cab suspension device for the leveling of a cab and having four actuators arranged in a square formation and including two pairs of actuators. The pairs are connected to a respective "common" pumping element (4). As present claimed, the term "common" merely requires one pumping element. The arrangement of Furihata et al. includes actuators with single lines for the supply and exhaust of hydraulic fluid that would reduce or increase the volume of a particular actuator under particular circumstances. Given the arrangement of Furihata et al., there is the ability of the "pairs" of actuators to be defined as being diagonally hydraulically coupled and under particular circumstances the pumping element would allow for the volume of one of a pair of actuators be reduced and the hydraulic fluid volume of the other of the pair (which is diagonally opposed) to be correspondingly increased.

Applicant has not claimed the pairs to be arranged in closed circuit so as to overcome the arrangement of Furihata et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the cab suspension arrangement of Paggi et al. such that pairs of the actuators are coupled so as to allow the fluid of one actuator of one pair to be reduced and the other actuator of the same pair to be correspondingly increased as taught by Furihata et al. so as to provide an efficient manner of stably balancing the cab along diagonal axes.

With respect to claim 10, there is merely claimed a duplicate pumping element. Applicant has not positively claimed by the broad language that the pairs of actuators are arranged to be in a hydraulic closed circuit. Therefore it would be obvious to one of ordinary skill in the art to duplicate the pumping element of Furihata et al. to provide increased ability to pump hydraulic fluid within the system and as a mere duplication of parts is within the skill and knowledge of one of ordinary skill in the art.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Paggi et al. in view of Furihata et al. as applied to claims 1,2,6-8 and 10 above, and further in view of Karnopp et al. (USPN 5,116,077).

The previous references have been discussed in the rejection above. However, neither reference discloses the well known use of an actuator comprising a hydro-pneumatic unit that additionally acts as a spring and damper.

Karnopp et al. discloses a vehicle leveling suspension that includes an actuator comprising a hydro-pneumatic unit that additionally acts as a spring and damper. This arrangement and the use of a hydro-pneumatic unit is well known in the art of vehicle suspensions.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the actuator(s) of Paggi et al. in view of Furihata et al. with a well known actuator comprising a hydro-pneumatic unit that acts as a spring and damper as taught by Karnopp et al. so as to provide the ability to raise a corner of the cab and further have a shock absorbing feature to make the cab more stable and comfortable for the occupant.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Paggi et al. in view of Furihata et al. as applied to claims 1,2,6-8 and 10 above, and further in view of Catanzarite et al. (USPN 6,070,681).

The previous references have been discussed in the rejection above. However, these references do not teach the well known concept of providing a low pass filter for filtering the output of a sensor.

Catanzarite et al. discloses a cab suspension having a controller that uses a sensor that further has a low pass filter (col. 11, line 13-16) for filtering the signal from such noise as provided in a suspension so as to provide a clean signal for the proper control of the cab suspension arrangement.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the cab suspension arrangement of Paggi et al., in view of Furihata et al., by including a low pass filter as taught by Catanzarite et al. for filtering the noise provided by the constant vibration of vehicle operation so as to provide a clean signal for the electric controller of the cab suspension arrangement to efficiently and consistently perform the necessary adjusting of the level of the cab by the actuators.

#### ***Allowable Subject Matter***

Claims 3 and 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Scholten et al. (USPN 6,948,580), McHorse et al. (USPN


6,073,714), Stephens et al. (USPN 4,513,845), LeSalver et al. (USPN 3,958,654), Tsukamoto (USPN 5,054,808), Ichimura et al. (USPN 6,820,877).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George D. Spisich whose telephone number is (571) 272-6676. The examiner can normally be reached on Monday-Friday 9:00 to 6:30 except alt. Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on (571) 272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

George D. Spisich  
July 23, 2006



**DAVID R. DUNN**  
**PRIMARY EXAMINER**